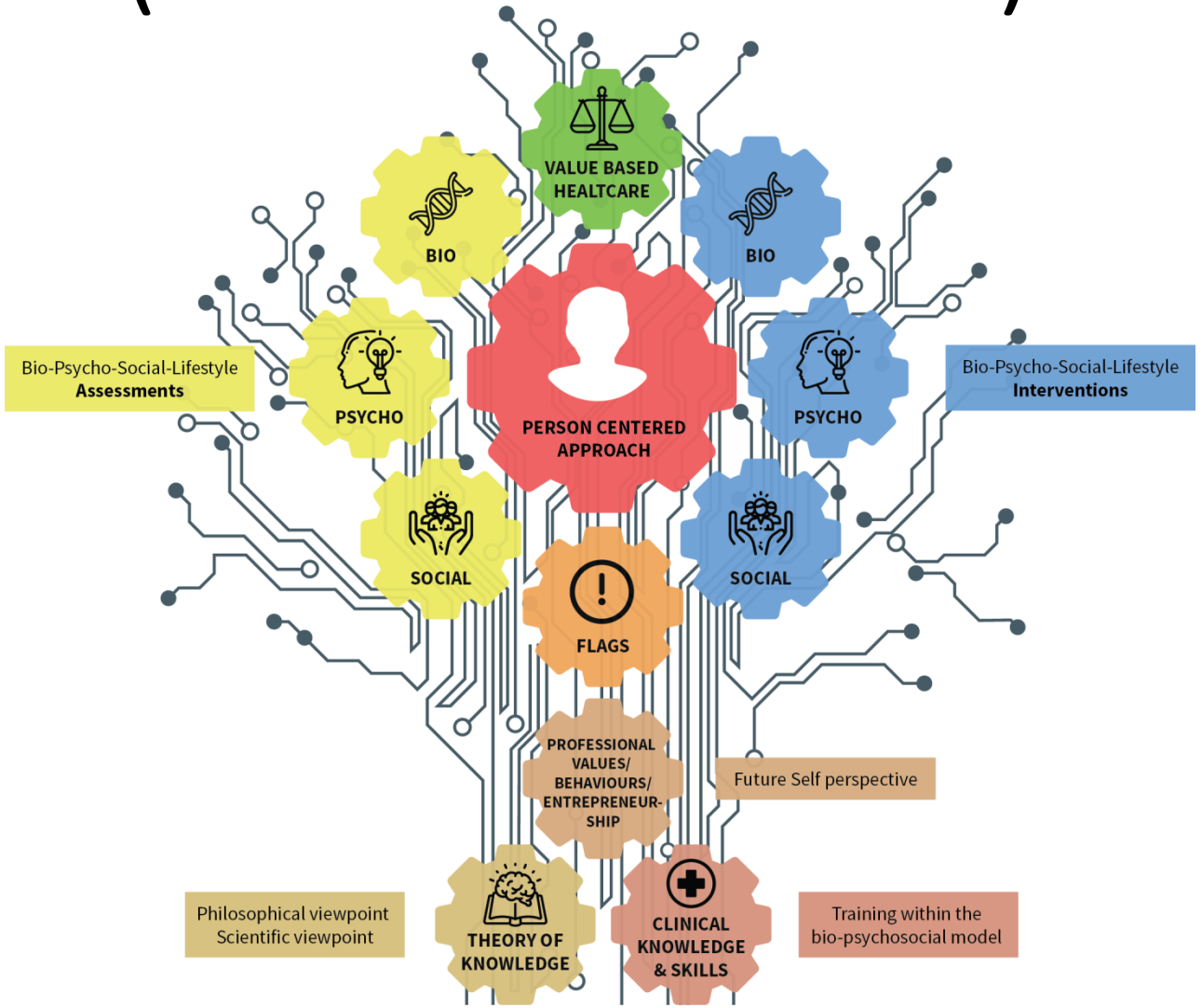
This case study has been developed for non-commercial, teaching purposes.

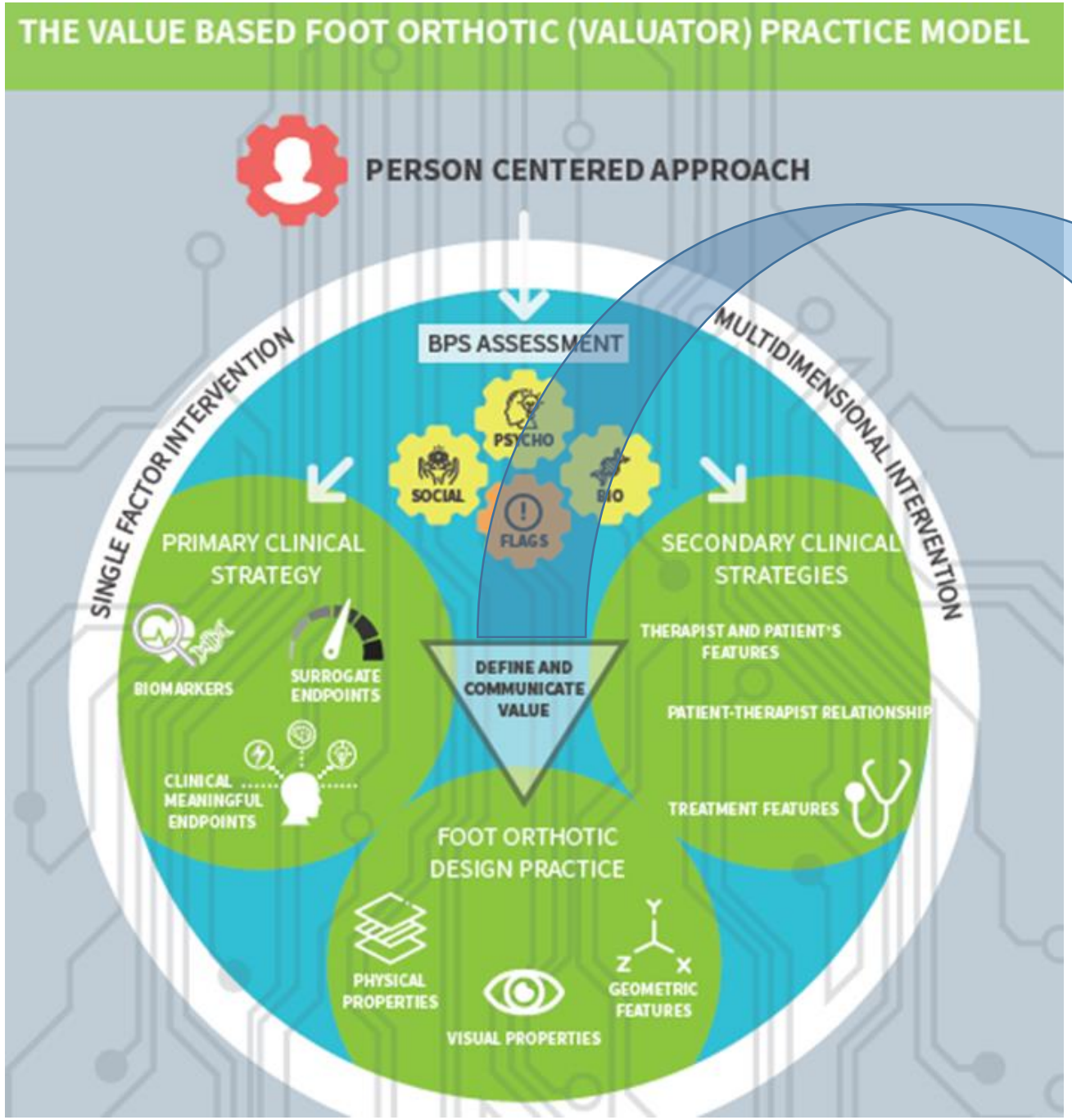
Questions/remarks can be forwarded to

gagijon@uma.es

The ValuE BaseD DIgiTal FOot CaRe Framework (EDITOR FRAMEWORK)



"A conceptual framework for contemporary professional foot care practice. "


THE VALUE BASED FOOT ORTHOTIC (VALUATOR) PRACTICE MODEL
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BPS ASSESSMENT
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SINGLE FACTOR INTERVENTION
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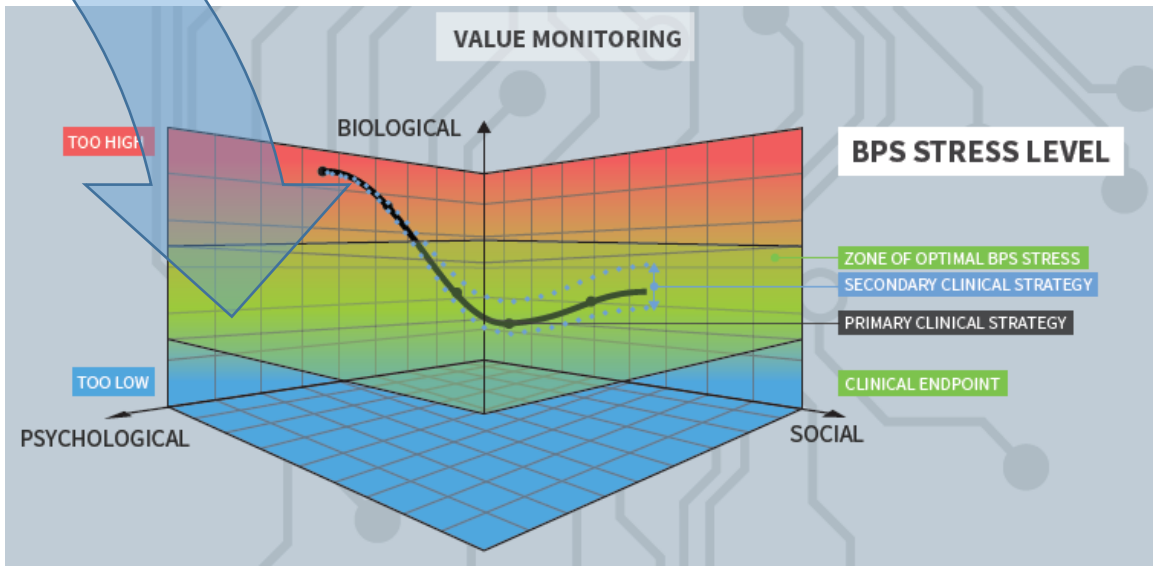
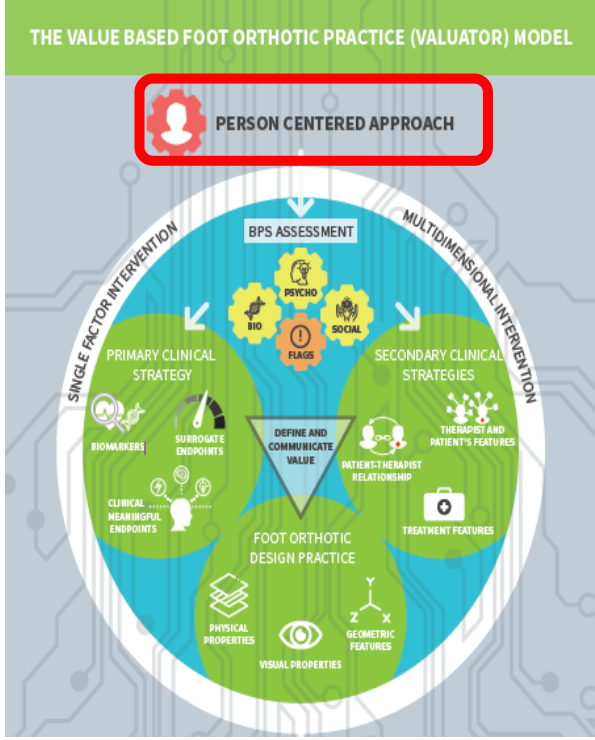
X


VALUE MONITORING
BIOLOGICAL
TOO HIGH
TOO LOW
PSYCHOLOGICAL
SOCIAL
BPS STRESS LEVEL
ZONE OF OPTIMAL BPS STRESS
SECONDARY CLINICAL STRATEGY
PRIMARY CLINICAL STRATEGY
CLINICAL ENDPOINT

- Man, 43 years old , without any kind of pain or disease, asymptomatic
- He run 5 time per weeks
- He works a podiatrist and every day is moving
- He wear sneakers shoes to work and he run with

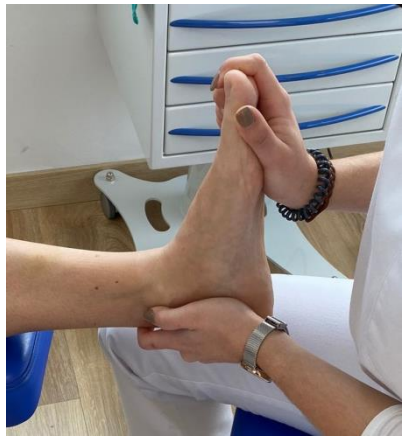
Broooks model Transcend

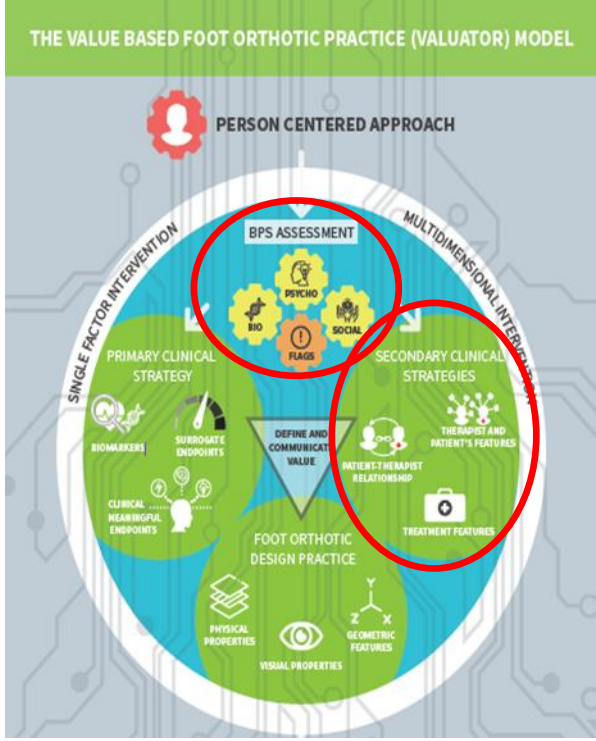
- Consults the podiatrist in light of a preventative approach (footwear advice, avoid running injuries…)
- The patient doesn´t have any relevant disease, only psoriasis
- The treatment will be a insole that distributes the loads. Also, information and advice on footwear and the sport that he performs



Physical examination

- Generalized joint stiffness.
- Limitation in the assessment of dorsiflexion of tibiotalar joint movements.





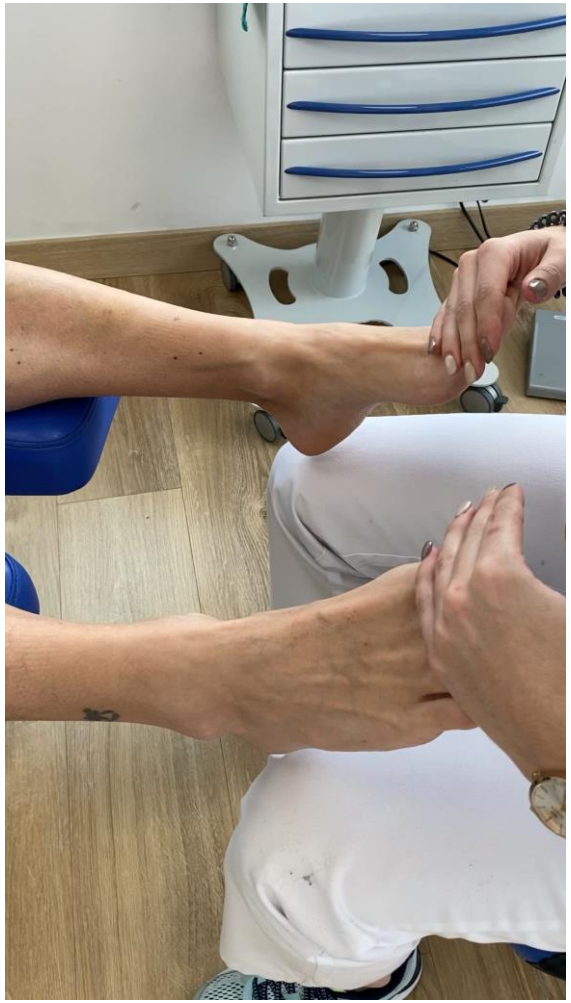
- Subtalar joint passive supination is excessive, with subtalar joint passive pronation was limited in the last part.

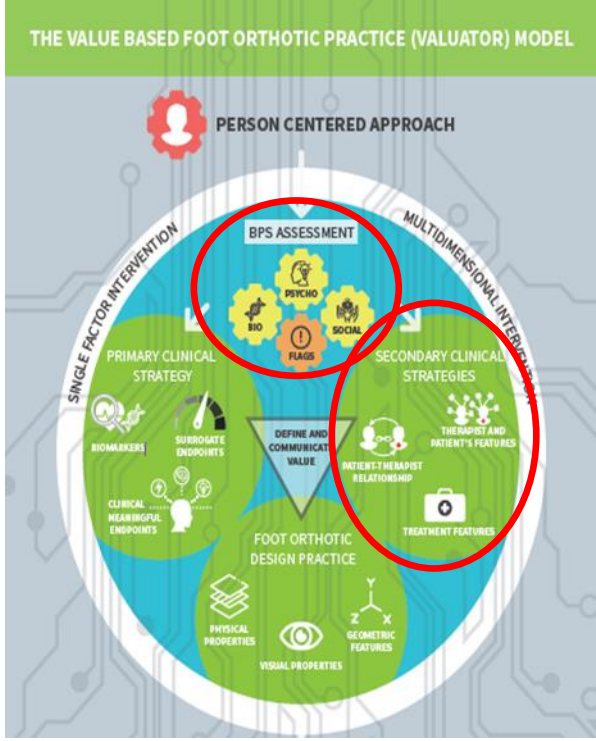
- Clinical assessment of lower limb length ruled out relevant length discrepancy between both legs.

- Hallux limitus test: Bilateral hallux rigidus

Physical examination (muscular exploration)

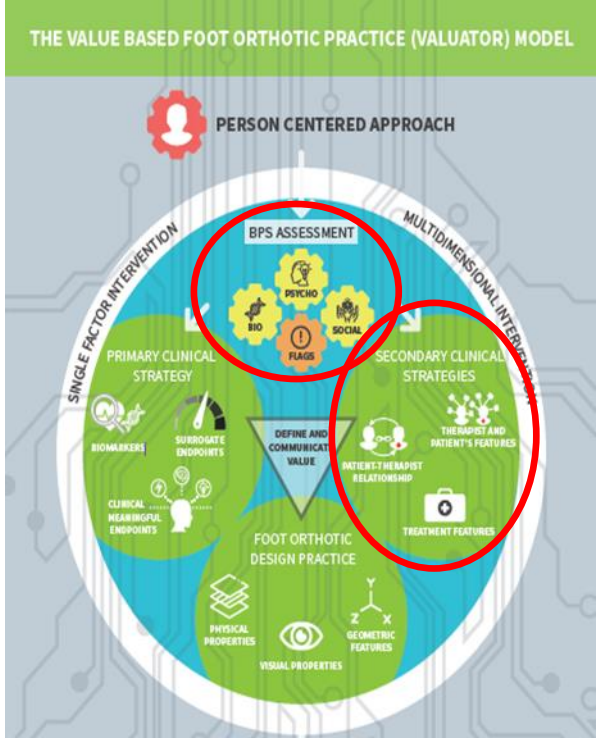
- Repetitive manual muscle testing of lower limb muscles and extrinsic foot muscles did not reveal any weakness.





Physical examination (different test)

- The patient has a body mass index of 23,6 kg/m² (normal score).
- **Jack test** was negative in both feet.



- **Supination resistance test** was positive in both feet: Laateralized axis, higher supinatorial moments.

- **Heel rise test** was negative in both feet.

- **Maximum pronation test:** The patient is in maximum pronation.

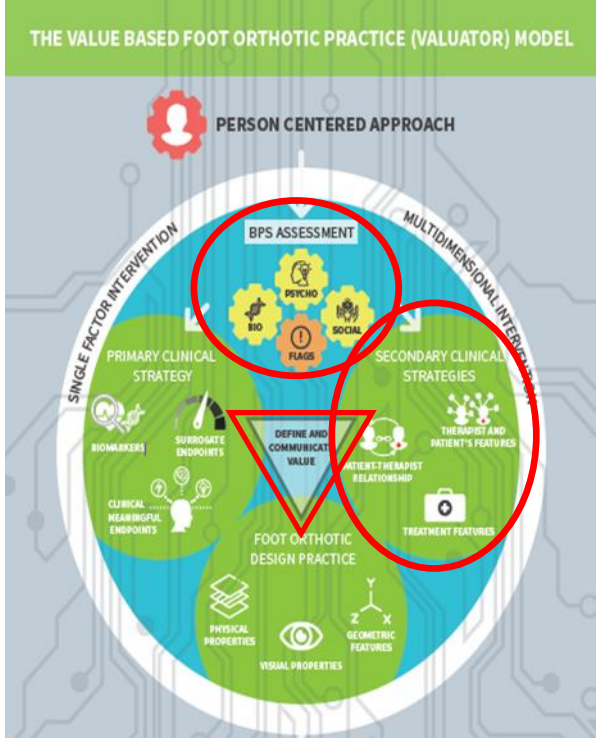
Patient Reported Measure about depression

Patient Health Questionnaire (PHQ 9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? *(Click on your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	○	○	○	◉
2. Feeling down, depressed, or hopeless	○	○	◉	○
3. Trouble falling or staying asleep,or sleeping too much	○	○	○	◉
4. Feeling tired or having little energy	○	○	◉	○
5. Poor appetite or overeating	○	○	○	◉
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	○	○	◉	○
7. Trouble concentrating on things, such as reading the newspaper or watching television	○	○	○	◉
8. Moving or speaking so slowly that other people could have noticed. Or the opposite —being so fidgety or restless that you have been moving around a lot more than usual	○	○	○	◉
9. Thoughts that you would be better off dead,or of hurting yourself in some way	○	○	○	◉

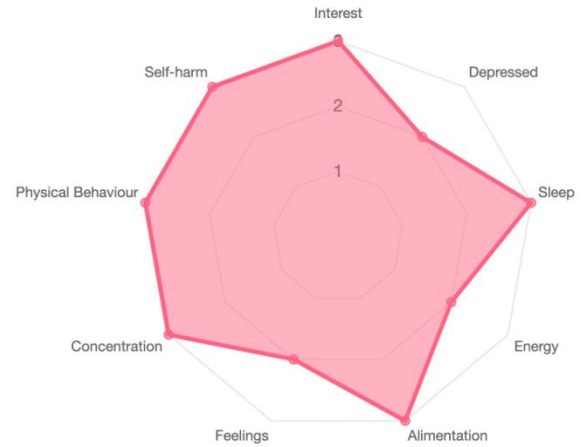
TOTAL SCORE: 24/27. High level of depression

Electronic circuit in red!!



Total score :

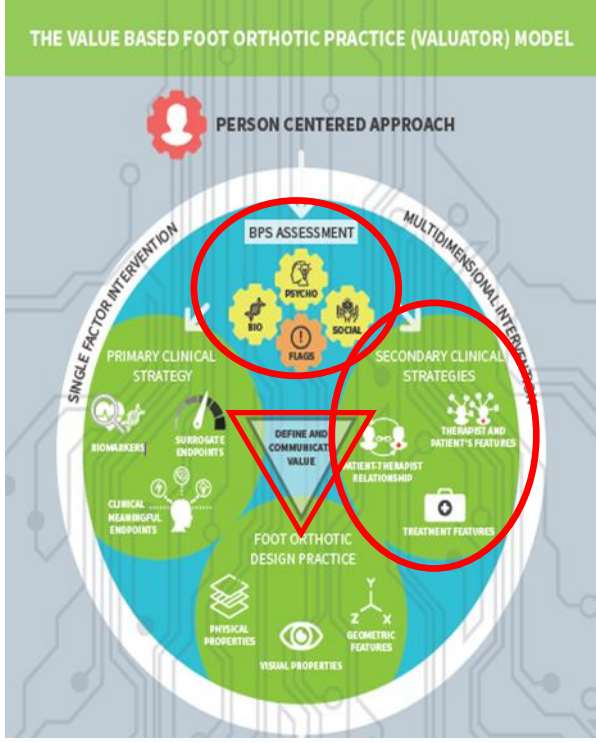
Your score is = 24



Patient Reported Measure about physical function

Foot and Ankle Ability Measure (FAAM) : Part 1

Because of your foot and ankle how much difficulty do you have with:	No difficulty	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	N/A
1.Standing	◉	○	○	○	○	○
2.Walking on even ground	◉	○	○	○	○	○
3.Walking on even ground without shoes	◉	○	○	○	○	○
4.Walking up hills	◉	○	○	○	○	○
5.Walking down hills	◉	○	○	○	○	○
6.Going up stairs	◉	○	○	○	○	○
7.Going down stairs	◉	○	○	○	○	○
8.Walking on uneven ground	◉	○	○	○	○	○
9.Stepping up and down curbs	◉	○	○	○	○	○
10.Squatting	◉	○	○	○	○	○
11.Coming up on your toes	◉	○	○	○	○	○
12.Walking initially	◉	○	○	○	○	○
13.Walking 5 minutes or less	◉	○	○	○	○	○
14.Walking approximately 10 minutes	◉	○	○	○	○	○
15.Walking 15 minutes or greater	◉	○	○	○	○	○



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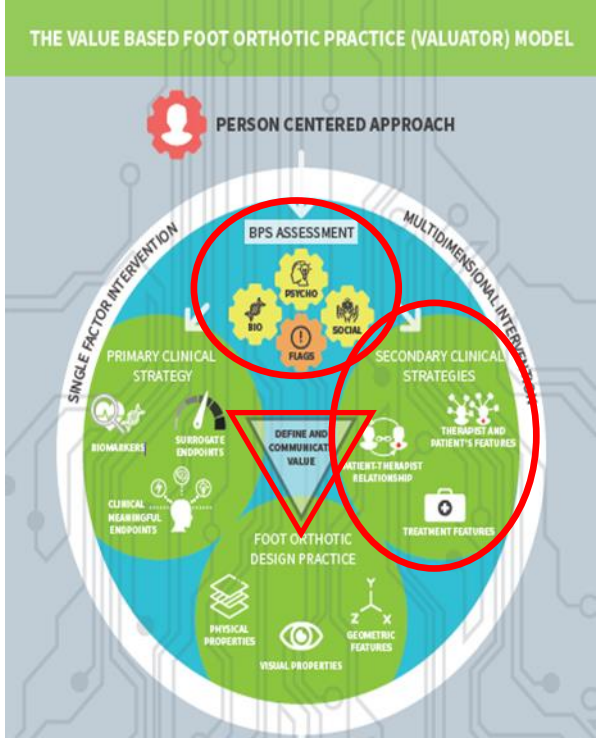
Patient Reported Measure about physical function

Foot and Ankle Ability Measure (FAAM) : Part 2



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Because of your foot and ankle how much difficulty do you have with:	No difficulty	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	N/A
16.Home Responsibilities	◉	○	○	○	○	○
17.Activities of daily living	◉	○	○	○	○	○
18.Personal care	◉	○	○	○	○	○
19.Light to moderate work (standing, walking)	◉	○	○	○	○	○
20.Heavy work (push/pulling, climbing, carrying)	◉	○	○	○	○	○
21.Recreational activities	○	◉	○	○	○	○

Patient Reported Measure about physical function

Foot and Ankle Ability Measure (FAAM) : Part 3

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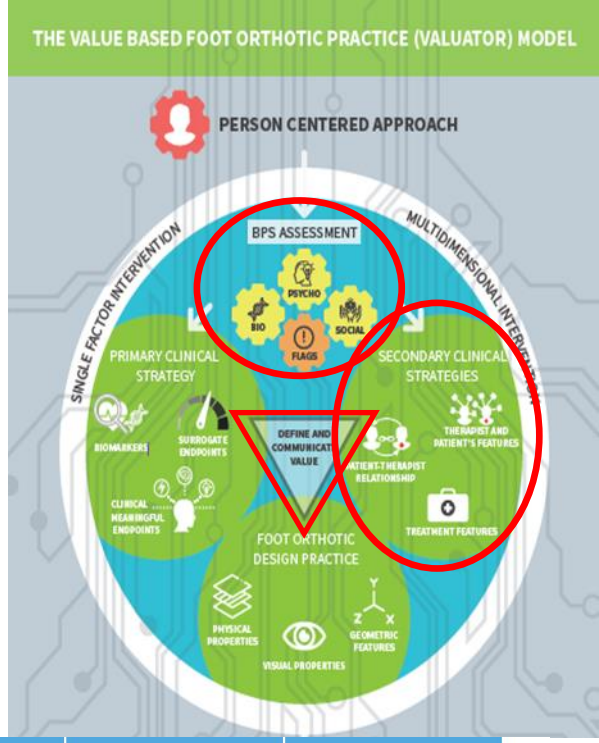


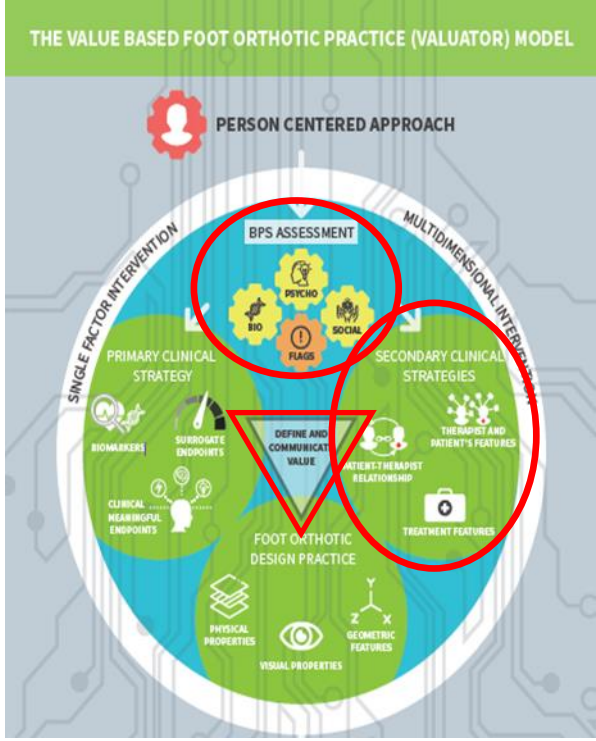
Because of your foot and ankle how much difficulty do you have with:	No difficulty	Slight difficulty	Moderate difficulty	Extreme difficulty	Unable to do	N/A
22.Running	○	◉	○	○	○	○
23.Jumping	◉	○	○	○	○	○
24.Landing	◉	○	○	○	○	○
25.Starting and stopping quickly	◉	○	○	○	○	○
26.Cutting/lateral movements	◉	○	○	○	○	○
27.Low impact activities	◉	○	○	○	○	○
28.Ability to perform activity with your normal technique	◉	○	○	○	○	○
29.Ability to participate in your desired sport as long as you would like	◉	○	○	○	○	○

Patient Reported Measure about physical function

Foot and Ankle Ability Measure (FAAM) : Summary

TOTAL SCORE:

- **Activities of Daily Living Scale** = 98,8% → High level of physical functioning
- **Sports Scale** = 96,9% → High level of physical functioning



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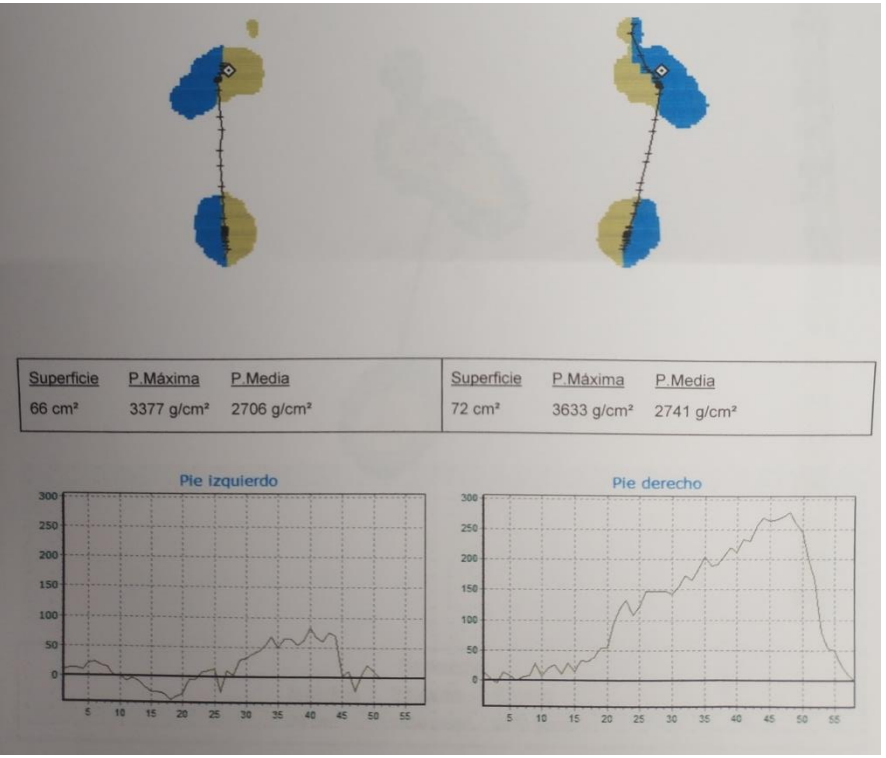
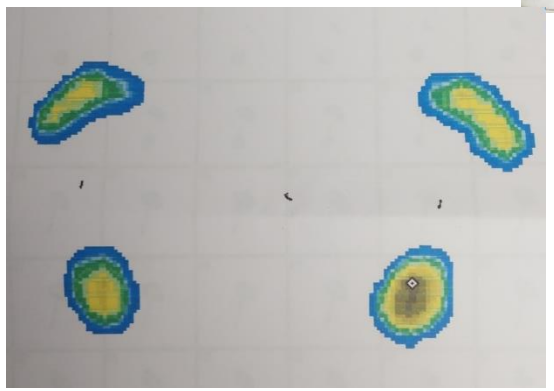
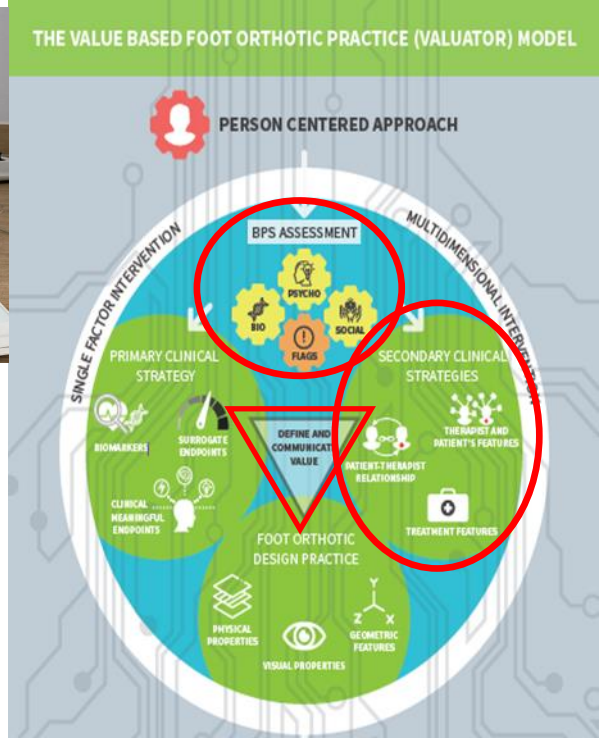
Gait analysis: Plantar pressure measurement

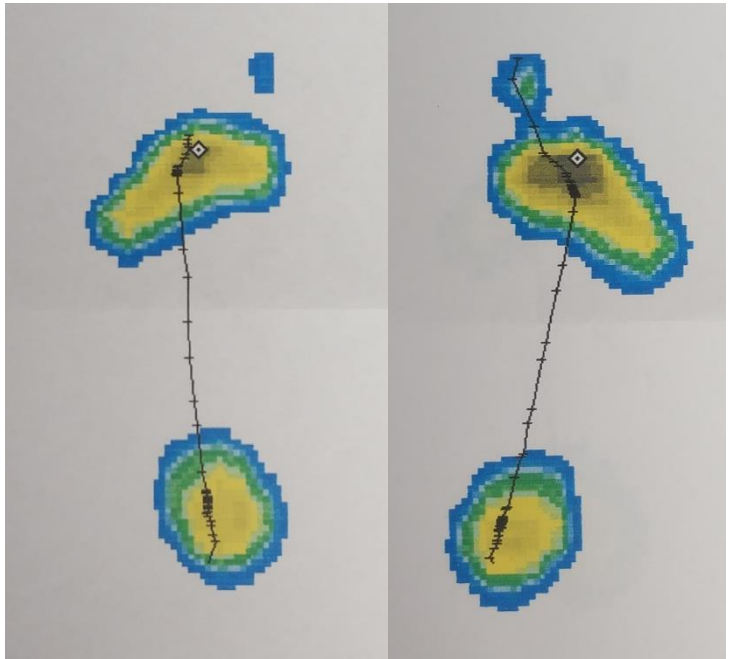






Medical imaging

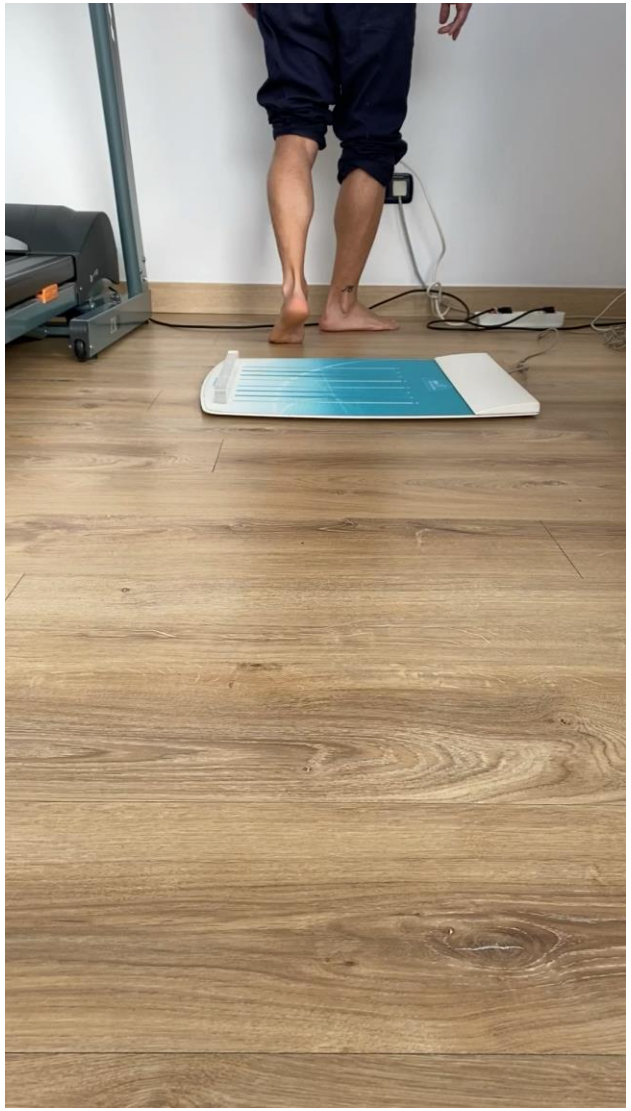
Not necessary

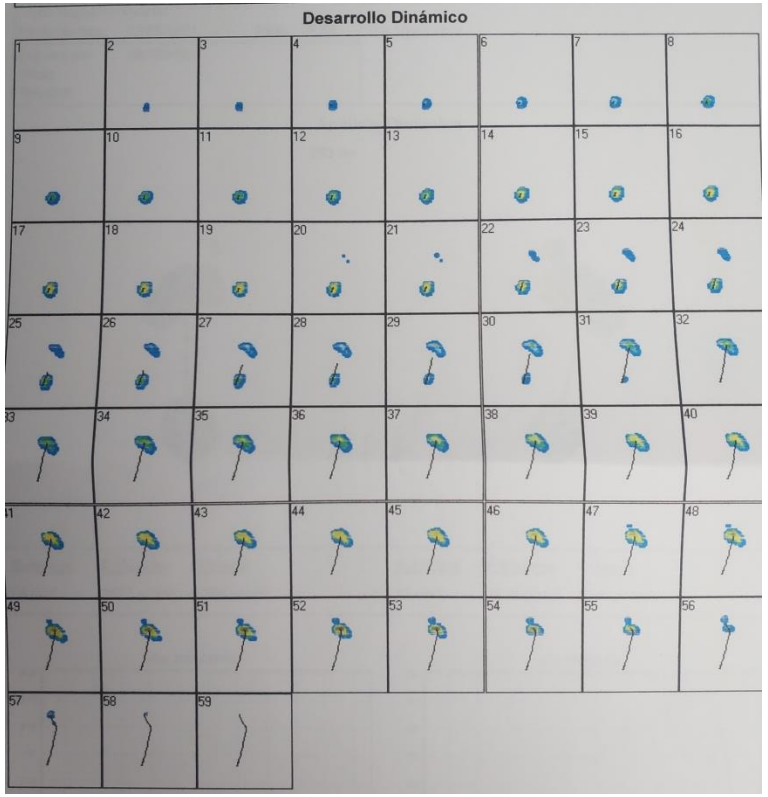


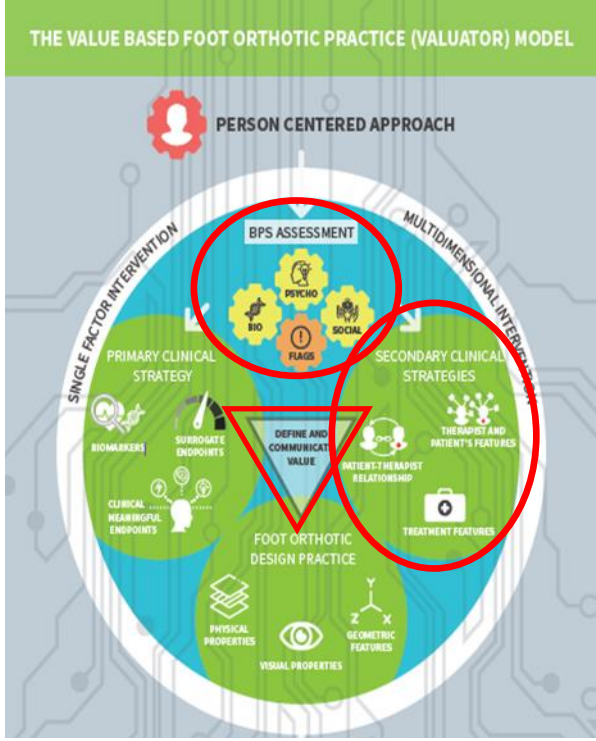
Standing pressure

- Cavus varus foot
- Doesn´t support the head of the first metatarsal. Maximum forefoot support on the second head
- Maximum support on right heel
- Greater weight load on the right leg

Gait analysis: Plantar pressure measurement



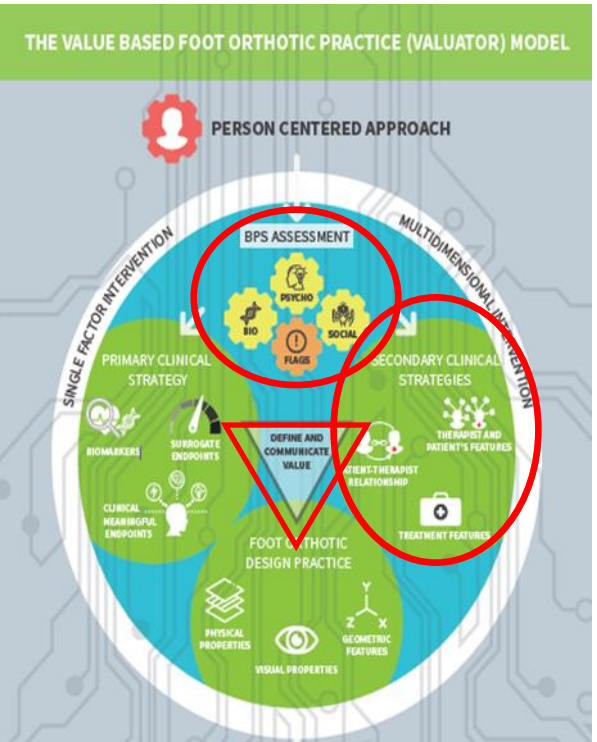




Walking pressure (dynamic)

- Good load transmission
- Correct gait phases
- Central metatarsal takeoff

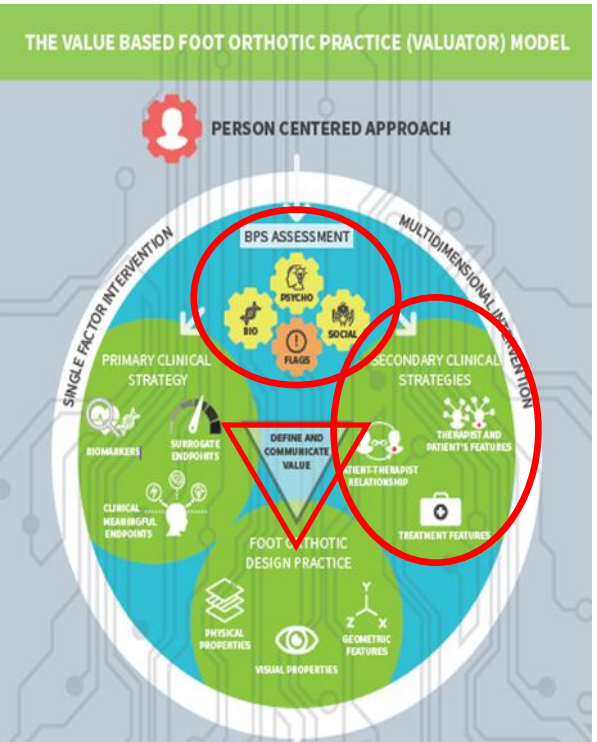
Gait analysis: 2D video-analysis

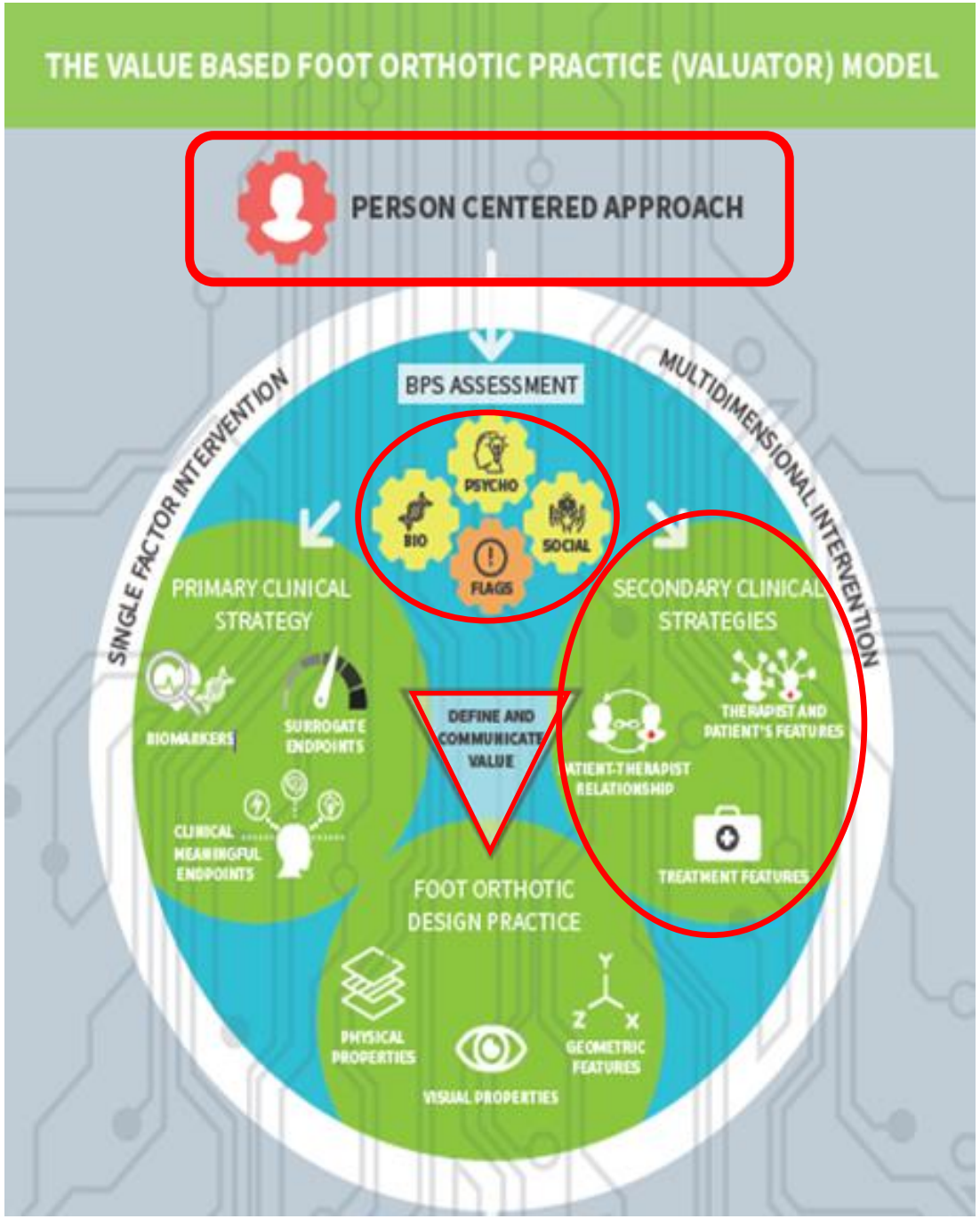


Without shoes

Gait analysis: 2D video-analysis

With footwear

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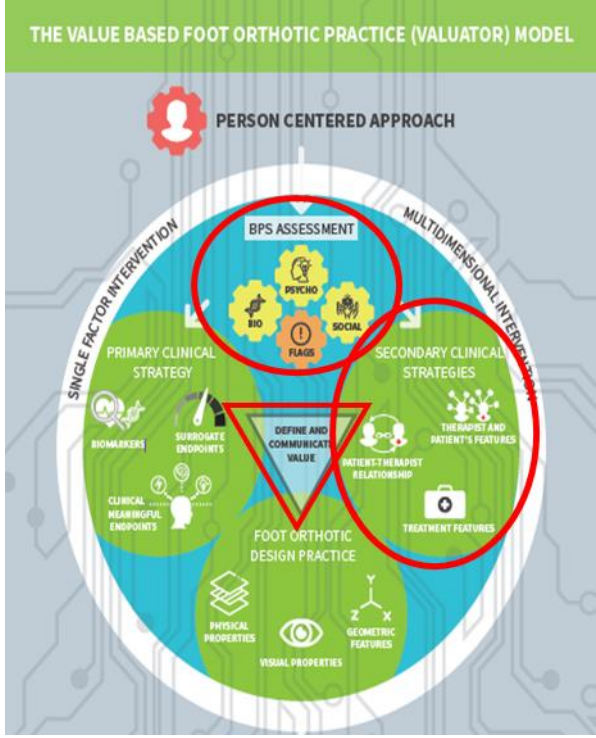
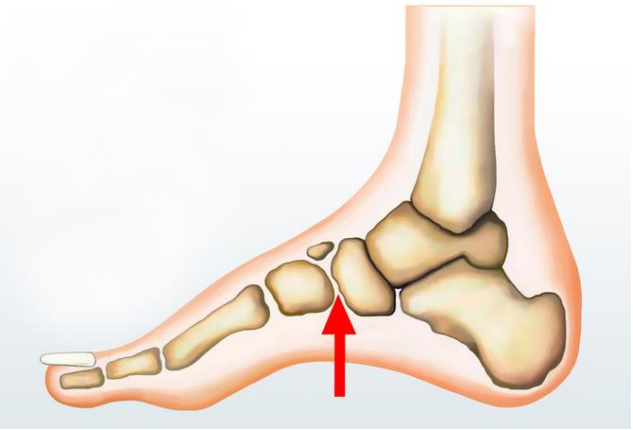
Feedback

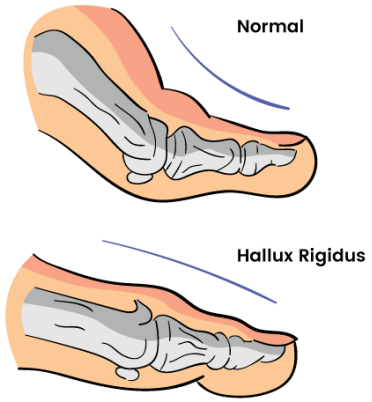
Diagnosis

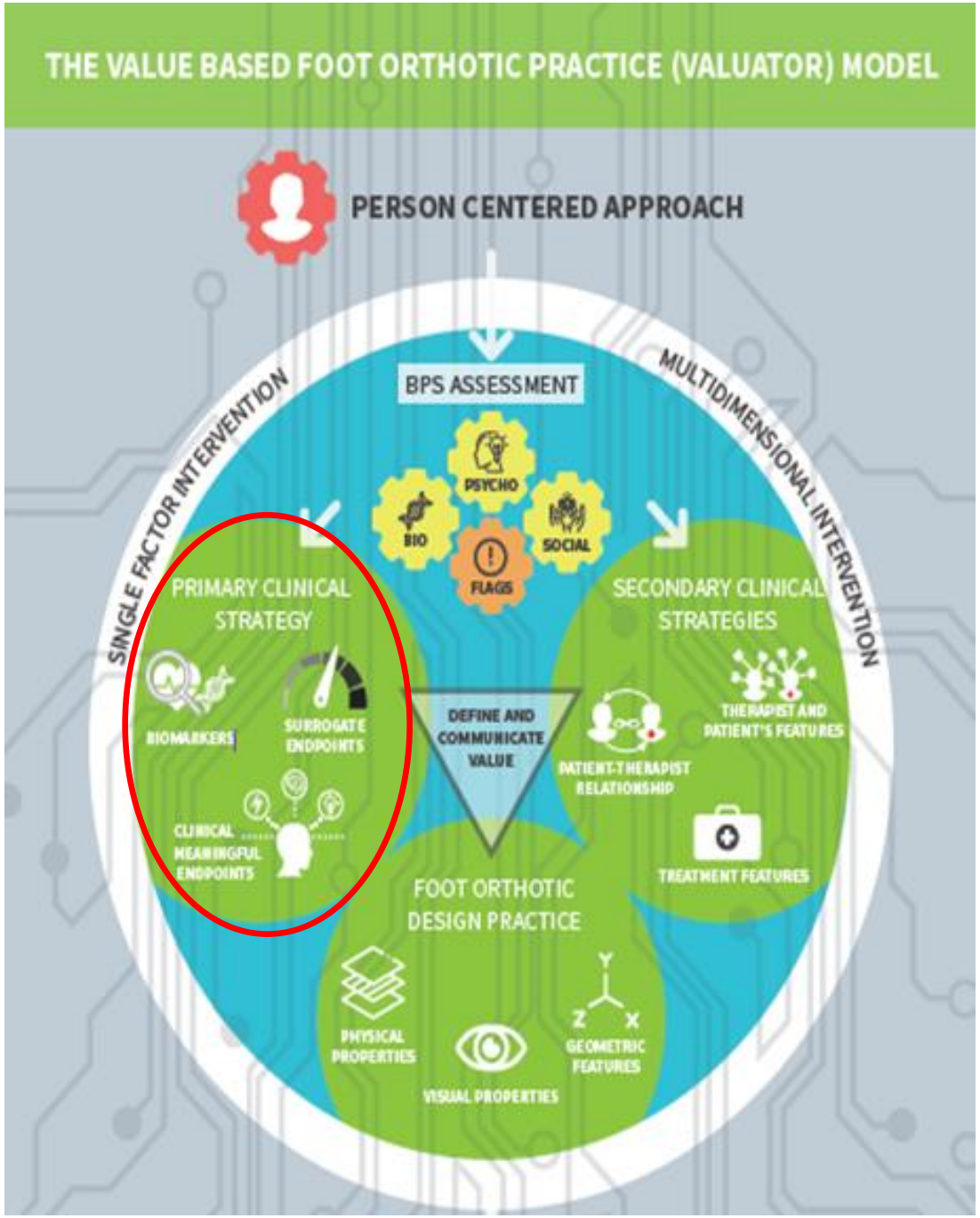
Based on the patient's clinical findings and his complete examination, he presents:

- Cavus-varus foot
- Joint stiffness, dorsal flexion limitation
- Bilateral hallux rigidus
- Weight bearing decompensation





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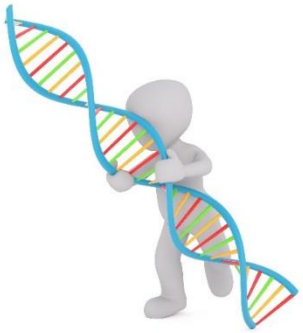
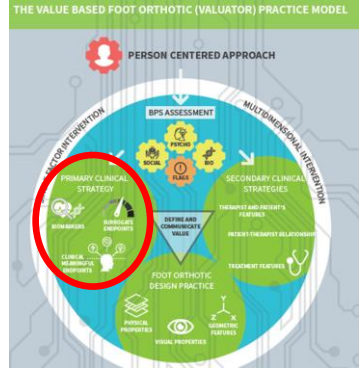
Primary Clinical Strategy





Patient perspective

Clinical meaningful endpoint reported by patient	Short and mid-term goals	Long-term goals	Clinical Measure
Pain-discomfort in daily activities	x		FFI (Daily Activity scale) + VAS
Increased work related stress due to foot pain	x		FFI (Daily Activity Scale)
Improve running activities	x		FAAM (Sports scale)
Increased body muscle tone	x		Scale

Therapist perspective

CME: Clinical Meaningful Endpoints
SE: Surrogate endpoint

Endpoint reported by therapist	Short and mid-term goals	Long-term goals	Measure
Rheumatic disease	x		Biomarker: Blood pressure
Pain-discomfort during daily activities and at work	x		CME: VAS+ FAAM (Daily Activity Scale)
Avoid progression towards stage III	x		Biomarker: MRI, Rx and Gammagraphy
Foot Posture	x		CME: Foot Posture Index
Changes of pressure	x		SE: 2D video-analysis & plantar pressure measurement

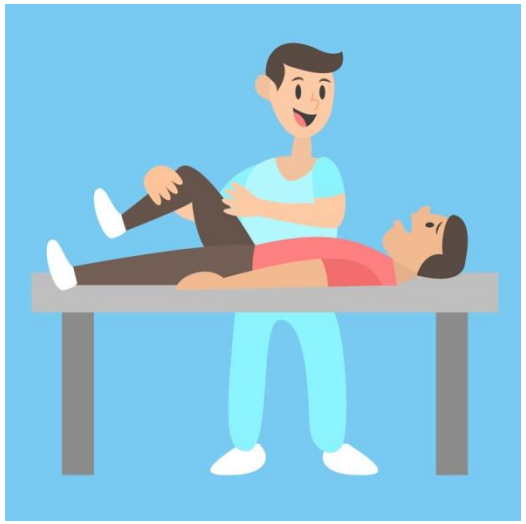
Therapist perspective

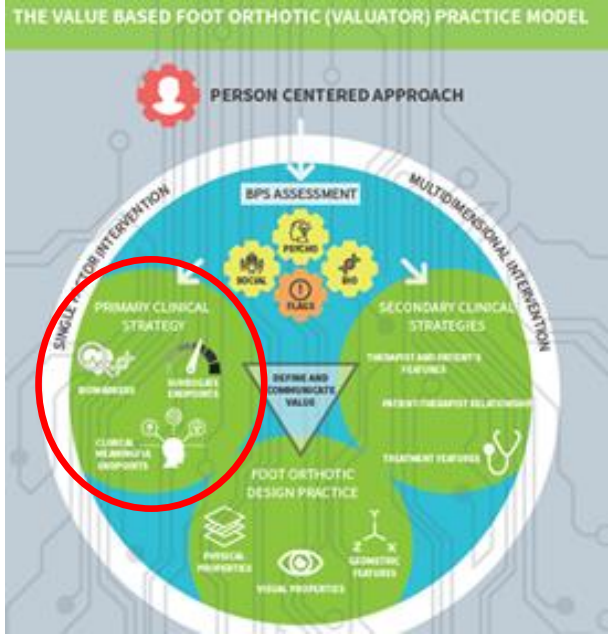
CME: Clinical Meaningful Endpoints
SE: Surrogate endpoint

Endpoint reported by therapist	Short and mid-term goals	Long-term goals	Measure
Improve running activities	X		FAAM (Sports scale)
Reduce of pain	x		Scale

Multidimensional approach

- Physiotherapy
  - Download all muscles
  - Physical therapy





The **plantar orthosis** is totally necessary for the good function and progression of **physiotherapy**

Our treatment ⟷ **Physiotherapy**

THE VALUE BASED FOOT ORTHOTIC PRACTICE (VALUATOR) MODEL

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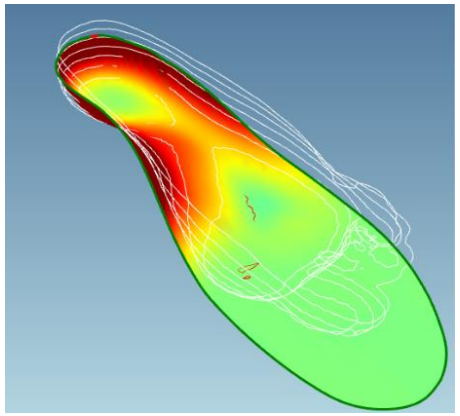
FOOT ORTHOTIC DESIGN PRACTICE

PHYSICAL PROPERTIES

VISUAL PROPERTIES

GEOMETRIC FEATURES



Endpoint reported by therapist	Short and mid-term goals	Primary Clinical Strategy	Secondary Clinical Strategy
Pain-discomfort in daily activities	x		
Increased work related stress due to foot pain	x		
Improve running activities	x		
Increased body muscle tone	x		
Pain-discomfort in daily activities	x		